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ABSTRACT

The Institute of Library Research (ILR) is a statewide organized research unit of the University of California (UC) whose activities have been directed toward the objectives of education, research and public service. During this reporting period the Institute underwent some significant changes, including a further separation of the University-wide Library Automation Program from ILR and a redefinition of the Institute's research scope toward long-range scholarly studies rather than focused studies of immediate interest to UC. This report summarizes the projects and activity of ILR for the period July 1974 through June 1975, including aid to university instructional programs, extension programs, sponsorship of seminars, and research programs on various aspects of computer applications to library processes. Other data in this report include ILR expenditures, funding, staff, publications, and five-year plan. (Author/SL)

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Institute of Library Research

University of California

Annual Report

July 1974 to June 1975

by

Charles P. Bourne, Director

Institute of Library Research
University of California
South Hall Annex
Berkeley, California 94720

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ILR-75-005

Institute of Library Research

University of California

Annual Report

July 1974 to June 1975

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ABSTRACT

The Institute of Library Research (ILR) is a Statewide organized research unit of the University of California whose activities have been directed toward the objectives of education, research, and public service. During this reporting period the Institute underwent some significant changes, including a further separation of the University-wide Library Automation Program from the Institute and a redefinition of the Institute's research scope toward long-range scholarly studies rather than focused studies of immediate interest to the University. This report summarizes the projects and activity of ILR for the period July 1974 through June 1975.

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I. INTRODUCTION

The Institute of Library Research (ILR) is a statewide organized research unit of the University of California, established in 1963 and affiliated with the School of Librarianship at UC Berkeley and the School of Library Service at UCLA. It is housed on the Berkeley campus. In its field the Institute of Library Research is one of the largest and most productive research facilities in the United States.

The following objectives statement, taken from the original proposal to establish ILR, has guided ILR policy and activities from the beginning:

> PURPOSE: The Institute will conduct research into library and information problems, develop methods for the improvement of the UC and other library and information systems, and advance education for librarianship.
>
> The long-term program of the Institute will be concerned with the basic problems of libraries and other information systems. Concurrently, short-term studies will be made of the immediate, pragmatic issues of the UC library system. In cooperation with the UC schools of librarianship, the Institute will provide opportunities for faculty and student research and for advanced or specialized post-graduate training for practicing librarians.
>
> The nine campuses of the UC system will be the laboratory of the Institute. The multi-campus nature of this system, the varieties of libraries within it, and its overall size and strength make it a model from which solutions to national library problems may be extrapolated.*

This original statement is included here as a point of reference because very significant changes have occurred during the past year. These changes are the product of several factors and have necessitated a revision of ILR's original objectives. Primarily what has transpired is:

- --the transfer of all the University-wide library automation projects and responsibilities from ILR to the new University-wide Library Automation Program.
- --the formation of a Library Steering Committee to establish plans and policy for regional UC library networking and cooperative efforts, and a decision by that group to have its supporting studies performed by the campus library staffs instead of by ILR.

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*Quoted from UNIVERSITY OF CALIFORNIA LIBRARY RESEARCH INSTITUTE, OUTLINE OF PROGRAM PLAN, mimeograph, November 17, 1964, prepared by Ray Swank and Robert Hayes, with the approval of the UC Library Council and ILR Advisory Committee.

--the establishment by University Hall of a position of Executive Director of University-wide Planning to serve as the agent for the Library Steering Committee, and with duties and objectives that somewhat overlap some of the ILR objectives.

--the establishment of a policy by University Hall that supporting studies for the new Executive Director for Library Planning will be done either by staff members to be hired to work with the new Executive Director, or by campus library staffs, instead of being done by ILR.

--the lack of financial support from University Hall for special ILR project work requested by the UC Library Council in furtherance of UC library system planning.

--the formulation of a policy statement by University Hall that ILR should not be engaged in solving immediate problems of the UC library system, and that our effort instead should be directed at more long-range scholarly studies.

The net effect of these changes is that whereas until this year ILR had been very active in work on immediate and long-term problems of the UC libraries, it will no longer be so. This represents a considerable shift in our objectives, sources of support, and the nature of project activities, and has resulted in significant disruptions to ILR operations.

Yet we have made the necessary adjustments and are vigorously pursuing a new course that emphasizes extramurally-supported basic research work. Several projects that were in progress during this transition period are being completed and will be reported on during the next fiscal year.

In spite of the difficulties described above, the past year has been a very productive one for ILR. Many noteworthy projects were completed, including a major planning study regarding the accessibility of the UC library resources at Berkeley and Los Angeles, and several well-attended training seminars sponsored by ILR relating to the new computer-based reference services. Also, the Director was honored by the Tanzanian government in connection with his UNESCO mission to help that government in its planning for a national system for the handling of scientific and technical information.

II. DESCRIPTION OF PROGRAMS

A. RESEARCH PROGRAMS

1. Bibliographic Access to UC Library Resources at Berkeley and Los Angeles

The University of California does not have a comprehensive printed union catalog of its library resources. Printed catalogs exist for major parts of the resources (e.g., G. K. Hall publication of the UCB and UCLA catalogs in 1963, the UC Union Catalog Supplement (UCUCS), the UCSC book catalog, and G. K. Hall publication of the catalogs of specific collections such as the Bancroft Library and the Institute of Governmental Studies). However, no single comprehensive union catalog exists. Parts of the library resources at both Berkeley and Los Angeles are included in the coverage provided by about 200 separate printed catalog publications. A significant fraction of the UC library resources is not represented in any printed catalog and is thus not visible to interested users who are away from the holding campuses.

One recent ILR study of the overlap in monograph materials among several of the UC campuses has shown that there is a significant amount of overlap in the monographs acquired by the individual campuses. In terms of total campus collections, one recent report noted that as much as an estimated 50 to 80 percent of the titles in some of the UC campus collections are also held in another UC campus library. (W. S. Cooper, et al., The Duplication of Monograph Holdings in the University of California Library System. Berkeley: Institute of Library Research, University of California, October 1974. ED-097 883.) In terms of acquisition duplication over a given time period, we have some UC data from the UCUCS project, which collected the monograph catalog records prepared by all UC campuses during the time period 1963-67. The UCUCS records show that from a total of approximately 1.04 million records submitted by the individual campuses, there was a total of about 750,000 unique titles. Thus some modest amount of duplicate acquisitions was experienced by the campuses. There are good reasons for having much of this overlapped material. However, some of the duplicate acquisitions might have been avoided if the individual campuses had information available to them to show what material was held by the other campuses; but this information was only partially available.

If the UC library resources are to be marshaled together to form a coordinated network of resources for direct borrowing and interlibrary loan or photocopying, and if there is to be a coordinated collection development policy, then it is absolutely necessary that library staff and users on any UC campus be able to readily and easily determine the holdings available within the entire system.

A major portion of the UC library resources is simply not visible to users who are away from the campus that has the resource. Some major

collections such as the Institute of Industrial Relations, with about 23,000 titles on the Berkeley campus, and the Center for Study of Contemporary Folklore and Mythology, with about 19,000 titles on the Los Angeles campus, have no printed catalogs, and off-campus bibliographic access to those collections can be effectively obtained only by physically going to those locations to use the local card catalog.

UC library resources are split between libraries that are recognized as part of the official campus library system (the General Library) and libraries that are not affiliated with the General Library system on each campus (e.g., an Institute or Departmental Library). The problem is compounded by the existence of many branch libraries (e.g., 26 branch libraries as part of the Berkeley General Library System, 20 branch libraries as part of the Los Angeles General Library System) and a total of over 200 unaffiliated libraries on these two UC campuses.

With this background, this study was concerned primarily with determining the extent of bibliographic access provided to the total Berkeley and Los Angeles library resources (General Library and unaffiliated libraries) from the point of view of users at each of the other UC campuses (and at other selected locations such as the 19 CSUC campuses). The collections at Berkeley and Los Angeles campuses were chosen as the first resources for study because these have been identified as major regional library resource centers for the UC system. Because each of the UC campuses has some library material that is unique to the UC system, this was intended to be the first phase of a series of studies that would eventually determine the extent of off-campus bibliographic access to all the UC library resources.

The major objectives of this study were to:

- Determine the extent of off-campus bibliographic access provided for the total library resources of the UC Berkeley and Los Angeles campuses;

- Identify the major access tools for these resources.

Several minor objectives were to:

- Assemble a carefully drawn sample bibliographic data base for each of these two campuses that could be used as a basis for subsequent studies of the UC campus library resources (e.g., consistency of cataloging treatment);

- Determine the characteristics of the library resources at each campus (e.g., distribution by language, age, form of publication);

- Determine the extent to which the campus resources were included in the National Union Catalog (NUC) publications;

- Determine the extent to which LC Card Numbers or other unique

identifying numbers were available for the catalog records of the campus resources;

--Determine the availability of the campus library resources (by policy) for interlibrary loan use;

--Determine the extent to which this material is still in the collection and immediately available for use (physical availability).

For all of the objectives, the data was analyzed and reported separately for the General Library system and for the unaffiliated libraries.

The general approach followed for each campus was the same. A sample of catalog records was drawn from the campus catalogs to represent the campus library resources. An effort was made to include in the sample population the holdings of all libraries of the General Library System and of all unaffiliated libraries with holdings above the arbitrary figure of 10,000 volumes. A total of 32 catalogs were included in the Berkeley sampling plan, and 24 catalogs in the UCLA sample. It was decided to take a total of 2,000 samples for each campus. It was felt that this would provide a satisfactory level of confidence from a statistical point of view.

For each campus a list was compiled of known printed catalogs and other reference tools providing access to the campus library resources. In order to assess the extent of intercampus bibliographic access to Berkeley library resources, it was necessary not only to identify those tools through which the Berkeley and UCLA holdings were accessible, but also to identify which of the other eight UC campuses and other libraries held copies of those tools.

Each of the sample records was checked against the printed catalogs that were available to point to campus holdings. Searching was done in 166 different printed catalogs that were relevant to the Berkeley resources, and in 120 printed catalogs that were relevant to the UCLA resources.

a. Access to Berkeley Library Resources

After the searching was completed for each of the titles in our Berkeley sample, we were able to make an estimate of the maximum possible extent of bibliographic access that would be possible with the present set of printed catalogs. About 67% of the total Berkeley library resources are potentially accessible to users away from the Berkeley campus. This is the maximum degree of bibliographic access that any off-campus user can achieve, and requires the use of over 150 of the presently available printed catalogs.

A search was made to determine which of the printed access tools were located in at least one copy at each of the other UC campuses. The

simplifying assumption was made that the physical presence of the printed catalog on that campus was synonymous with effective bibliographic access. We know that this is not always the case. Consequently we see the strong possibility that the effective degree of access will in fact be less than the assessment that we have computed as the potential degree of access by each off-campus user. All of the UC campuses have about as much potential access as can be obtained with the presently available access tools. Thus no dramatic improvements in access can be obtained simply by buying a few more copies of the access tools and placing them on the campuses.

With the same assumptions as made for the UC campuses (i.e., the physical custody of a catalog on campus constitutes bibliographic access), an analysis was made of the extent to which each of the 19 California State University and Colleges (CSUC) campuses had bibliographic access to the Berkeley resources.

Some CSUC campuses have about the maximum extent of bibliographic access that is possible, and a few of them have very poor bibliographic access to the Berkeley library resources. The California State Library already has about the maximum extent of bibliographic access to the Berkeley library resources that is possible, as do Stanford and USC.

Some suggestions have been made that the printed National Union Catalog (NUC) and its associated publications might be able to serve as a continuing book catalog to the UC library resources if there were some changes in policies and procedures for both NUC and UC. For this reason we were interested in finding out how much and what kind of UC material went into NUC. The collected data suggests that the NUC tools do not serve as comprehensive locators for UCB material. The data also indicates that over 36% of the UCB material is not included in the present NUC publications.

The Berkeley Author-Title Catalog published by G. K. Hall in 1963 is the most significant single access tool available for the Berkeley resources. As a single publication, it points to almost 29% of the total Berkeley library resources. With the exception of the NUC publications and the East Asiatic Library Catalog, no other single published catalog points to more than 3% of the total Berkeley Library resources.

As would be expected, the bulk of the Berkeley library resources, almost 80%, are made up of monographs, reports, and serials, in that order. The unaffiliated libraries have a considerably higher fraction of recent publications than the General Library does. Almost 90 percent of the collections of the unaffiliated libraries consist of publications from 1930 to the present, while this same time period only represents about 65 percent of the holdings of the General Library. The Berkeley library resources exist in over 40 languages, English-language material accounting for about 60% of the collection, and with German, Spanish, and French materials following in rank order. About 10% of Berkeley's library holdings are printed in languages with non-Roman characters (e.g., Japanese).

Suggestions have been made of the possibility of preparing a computer-based numeric register or book catalog for the UC library resources in a manner similar to that done recently for the Louisiana libraries and now being done for the CSUC System. Such a finding tool would consist simply of an LC Card Number, or ISBN, or ISSN, along with a location code and perhaps a call number for the holding library, and would be relatively inexpensive to produce. Obviously it could only be used as a limited finding tool and perhaps be of some interest to library selection staffs in the context of cooperative collection development and utilization.

Some of the existing Berkeley catalog records contain such a number on the local catalog record; however, some of the records are associated with numbers that can only be found by searching some other catalogs such as the NUC; this often happens, for example, when a catalog card is prepared locally in advance of cataloging by LC and not replaced or augmented subsequently by the LC information. The data indicates that 55% of the Berkeley library material have some sort of unique national or international number associated with it, but a large fraction of the numbers are not on the local cards and would have to be found by a relatively time-consuming lookup process. About 35% of the total Berkeley library resources have some type of unique national or international identification number on the local catalog record.

Some of the material identified through the access tools as being at Berkeley is not available for interlibrary loan to other UC campuses or to other institutions. This is particularly true for rare books or other special material. The data shows that over 82% of all the Berkeley library resources are available by policy for interlibrary loan, and that of all the material accessible through the catalogs, 85% is available by policy to go out on interlibrary loan. The unaffiliated libraries are more restrictive than the General Library with regard to loan policies.

When planning for and considering the designation of the Berkeley library materials as a regional resource, attention must also be given to the extent to which the items identified in the various access tools are actually available for use away from Berkeley. Independent of any policy restrictions on the loaning of the materials, their availability might be further limited because the material is lost or not otherwise available, despite what the catalogs and policy statements say.

For this study, an effort was made to try to physically place our hands on a copy of each of the sampled titles, as if we were actually going to check them out or take them to the interlibrary loan office. We did this mostly by going directly to the shelves to look for the material, and by placing search requests and recalls on the material that we could not find. The results of this physical search effort show that at least 95% of the library material represented by the local catalogs is in fact physically still in inventory and available for use.

From the point of view of an off-campus user, only a fraction of the Berkeley library resources is visible through the printed catalogs. In terms

of effective inter-institutional use by interlibrary loan or other means, this fraction is further reduced by library policies which prohibit the circulation of some of this material. This fraction, which has then been located and is available (by policy) for loan, shrinks a little bit more because of the physical loss of some items that might otherwise have been available for loan. The net result is a reduced degree to which the material can actually be identified and borrowed by off-campus users. The compound effect of all of these factors is that an upper limit of about 54% of the total Berkeley resources can be considered accessible and available for use (without coming to Berkeley) by a user away from the Berkeley campus. This figure will actually be lower for locations of other than UC campuses because some of the printed catalogs (e.g., UC Union List of Serials, preliminary edition) are only available to the UC campus libraries.

The material excluded from the printed catalogs is definitely different from the mix of the entire sample. It consists of fewer monographs, but a higher percentage of maps, reports, recordings, and other special forms of material. The excluded materials from the unaffiliated libraries are composed of more recent publications than the excluded materials from the General Library. Furthermore, the exluded materials are characterized as being significantly more recent material than the material in the total Berkeley sample; over 70 percent of the total excluded material was published between 1960 and 1974. The excluded material has, in very gross comparisons, about the same language distribution as the total campus sample.

b. Access to UCLA Library Resources

About 70% of the total Los Angeles library resources are potentially accessible to users away from the Los Angeles campus, if all of more than 150 printed catalogs are used. This is the maximum degree of bibliographic access that any off-campus user can achieve with the present printed catalogs. All of the UC campuses have about the maximum degree of access possible. Six of the 19 CSUC campuses have about the maximum possible bibliographic access possible, while the other 13 have a poor degree of access. The California State Library and USC have good bibliographic access to the UCLA resources.

The NUC tools do not serve as good locators for UCLA library resources. As finding tools, they only point to 16.5% of the total UCLA library resources.

In a pattern similar to Berkeley, the bulk of the Los Angeles library resources, almost 90%, is made up of monographs, serials, and reports, in that order. They exist in over 33 languages, with about 67% in English, and with French, German, and Spanish following in that order. Over 5% of the UCLA library holdings are printed in languages with non-Roman characters (e.g., Japanese).

About 66% of the UCLA library material has some sort of unique national or international number associated with it, but a large portion of

the numbers are not on the local cards and would have to be found by a relatively time-consuming lookup process. About 37% of the total UCLA library resources have some type of unique national or international identification number on the local catalog record.

Almost 85% of all of the UCLA library resources are available by policy for interlibrary loan, and of all the material accessible through the catalogs, almost 86% is available by policy to go out on interlibrary loan.

The UCLA material not covered by the printed catalogs is definitely different from the mix of the entire sample. The excluded material consists of considerably more recently published material than the general sample. The excluded material has about the same language distribution as the general campus sample, with the top five languages other than English in both cases being Spanish, French, German, Russian, and Italian. The excluded material is represented by unique national or international identification numbers for about 63% of the material. Numbers were given on the local cards for about 38% of the excluded material.

Because the study team was located at Berkeley and because of the limited funds for this study, it was not possible to determine the physical availability of the sample items from UCLA. The task would have involved a considerable amount of field work in the Los Angeles libraries to verify the physical availability of each of the items. Hence it was not possible to determine a net availability figure for the UCLA library resources.

The results of this major study are reported in more detail in a recent ILR report (C.P. Bourne, D. Reed and M. Buss, Bibliographic Access to the University of California Library Resources at Berkeley and Los Angeles. June 1975. ILR-75-003.) It is expected that this report will serve as a major source of planning data for much of the future deliberations regarding bibliographic access and networking for the UC library system.

2. Planning Data for Serials Cancellations

Serials subscriptions are a significant and important part of the library budget of any major library; they easily comprise 50-70 percent of the acquisition budgets of most academic libraries. Some special libraries spend even larger percentages for serials. At UC Berkeley, for example, the Chemistry, Biology, and Public Health libraries in fiscal year 1973-74 liened 96, 93, and 86 percent of their total acquisition budgets for serials. With inflation, dollar devaluation, and the rapidly increasing serials price index, many libraries have been faced with the task of cancelling serial subscriptions, sometimes on a rather hurried and harried basis.

It is difficult to make these cancellation decisions on any rational or coordinated basis when there are a large number of titles to consider, or when the cuts must be made with a very short planning time. This operational problem of planning for large cutbacks in serial subscriptions was of interest to us and prompted this study which we completed during this reporting period.

Many techniques are available to help in decision-making regarding serials selection or cancellations, and several of these are described in the project report. Each library can make its own decisions on a title by title basis, considering only the needs or objectives of that single facility. However, in order to assure local users of access within a reasonable period of time, it would be preferable to make decisions from a system or network point of view, considering the holdings and needs of other institutions. For example, it would be regrettable for a UC library to cancel an important title to solve its local budgetary problem, if that were the only current subscription to that title in the entire UC system. For this reason, our study tried to provide data that would permit decision-making to be done in this larger networking context. We were particularly interested in several overlapping systems or networks: the UC library system, the UC/CSUC intersegmental system (the nine UC campuses and the 19 campuses of the California State University and Colleges system), and the National Library of Medicine Region XI participating facilities.

The major objectives of this study were to:

a. Develop a methodology for obtaining and providing background information that would be immediately useful for planning and decision-making regarding serials cancellations or the cooperative acquisition of serials.

b. Determine the utility and feasibility of this approach.

c. Provide some planning information that would be of immediate use to library selection staffs and management.

It was not practical to start our study with the tens of thousands of current UC serial title subscriptions. We needed some way to select a smaller and more workable group of these titles. Several methods of partitioning were considered. From several earlier studies we knew that foreign

language publications as a group generally receive less use than English language publications, and it is obviously desirable to aim initial cancellation/cooperative efforts at a group of low-use titles. Consequently we chose to focus our attention on foreign language serials. It is also obvious that sharing collections is more feasible for groups of libraries that already have some systemwide connections and commitments. Because SERLINE (SERials-on-LINE), the National Library of Medicine's on-line serials file, includes the capability of searching by language of publication, we could easily identify and print out the potential low-use foreign language titles currently held in Region XI. Six of the nine UC libraries are Region XI resource libraries and report their holdings to SERLINE so we could then check multiple subscriptions for both the UC system and the network represented by the Region XI libraries.

At the time this study was begun SERLINE contained approximately 5,600 current biomedical serial titles. Originally generated from the current titles included in the Union List of Medical Periodicals from the Medical Library Center of New York, SERLINE also includes all titles indexed for Index Medicus and selected titles indexed in Biological Abstracts, Chemical Abstracts, Excerpta Medica, Psychological Abstracts, and the World List of Medical Periodicals. Current additions include all new Index Medicus titles and titles cataloged by the National Library of Medicine which meet the criteria of being primary, substantive, and pertinent to bio-medicine.

We further restricted our attention by excluding the titles in the western European languages of French, German, Italian and Spanish. Including the western European language titles would have added another 2,354 titles (757 in French, 806 in German, 365 in Italian and 426 in Spanish) to our list and greatly increased the burden of checking. Focusing on the remaining foreign language titles provided us with a list of manageable size and with a high percentage of low-use titles. The resultant list included 950 current titles in 34 languages. NLM furnished us with computer printouts of these 950 titles by language with their supporting bibliographic information and the locator codes of the Region XI libraries that had a current subscription. These 950 titles served as our starting point for data collection.

Many factors could be considered in evaluating serial subscriptions on a title-by-title basis. The ones that were used in this study were:

--cost of the subscription

--number of subscriptions available elsewhere (within the same institution and in cooperating institutions), and the extent and completeness of retrospective holdings of each title

--extent of coverage by abstracting and indexing services

--frequency of citation to a title from other publications

--extent of use made of the material (e.g., recorded circulation)

For expediency, the subscription cost data for this study was taken, when available, from several published directories even though it was known that prices had since increased for many of the titles. The serial payment record of the UC Berkeley library was also used as a source of price information. It was not possible to determine a subscription price for some titles during the course of the study.

Although the SERLINE data base provides location information for the Region XI resource libraries, it does not include holdings data. Serial holdings for the UC system were obtained from the most recent editing copy of the UC Union List of Serials, as well as the latest serials lists of the individual campuses. Holdings information for the 19 California State University and Colleges (CSUC) campus libraries was obtained from the CSUC Union List of Periodicals. The holdings information for the other NLM Region XI libraries was obtained from the serials lists of those individual libraries.

Information regarding the extent of each title's coverage by the major abstracting and indexing services was obtained in several ways. The NLM SERLINE data base printouts included an annotation to show whether or not a title was covered by Index Medicus. However, no information was available regarding the ranking or yield of each title for Index Medicus. SERLINE records were also annotated to indicate coverage by Excerpta Medica. In addition, the Editor of Excerpta Medica generously furnished us with a list of the titles covered by that service, with hand-written annotations to identify those titles considered to be their core publications.

The source data from Chemical Abstracts that we eventually used for this study was a frequency count provided us by special arrangement with CAS that included frequency counts and rank numbers for each of the 8,005 titles that contributed one or more citations to CA (vol. 78 and 79) during the year 1973. Both the rank order number and the yield figure were taken from this source for our study.

BioSciences Information Service (BIOSIS) included 7,980 serial titles in their 1973 List of Serials. A frequency listing was made available to us by special arrangement with BIOSIS that included frequency counts for each of the titles that contributed one or more citations to BA during 1973. These frequency counts were taken from this source for our study.

ISI recently published a series of special reports, the Journal Citation Reports (JCR), which was based on the ISI source publications for the last quarter of 1969, and included a rank order listing and citation frequency data for the 1,000 most frequently cited titles. This report series also provided impact factors for each title that took into account the number of articles published annually by each title. The rank number, number of citations, and impact factor from this JCR series were all used for this report.

Several of the libraries that were readily accessible for this study had circulation records that could be used for it. The UC libraries at Berkeley, San Francisco, and Los Angeles, and the Stanford Lane Medical Library all had charge-out slips attached to the physical volumes of many of the titles that were studied. For each of the libraries studied, the total number of recorded circulations for a given title was divided by the total number of years of that library's bound holdings of that title in order to obtain an average number of circulations per year.

The results of our data collection efforts were presented in the form of the sample table given in Figure 1. Decisions regarding title cancellations are best made by library staff members working with their constituencies, and the authors did not label individual titles as targets for cancellation. However, we did formulate some decision rules which might be used to identify cancellation prospects, in order to determine the financial impact of following such decision rules.

The impact of applying various decision rules is discussed in the final report of this project. (Bourne, C. P. and D. Gregor, Methodology and Background Information to Assist the Planning of Serials Cancellations and Cooperative Serials Collection in the Health Sciences. January 1975. 60 pp. ILR-75-002. ED-104 409.) The method of approach used in this study was found to be workable, and can lead to some very useful planning information with a relatively modest amount of effort. Once completed for a given group of titles, the same format and structure can readily be used to periodically update the table information to reflect changes in holdings,,price, and other factors. In terms of the resulting identification of candidate titles for cancellations, this data collection and analysis effort, particularly when done on a regional basis, definitely seems to be a good investment of time and resources, and it would seem to be worthwhile to continue this type of analysis effort for other groups of serials.

The results of this effort have been presented to various library groups within the UC system and to the Medical Library Association, and a paper corresponding to the final project report has been accepted for publication in the Bulletin of the Medical Library Association. A proposal has been submitted to the National Library of Medicine for extramural support for further work on the methodology and data collection of a much larger group of serial titles.

EXTENT OF HOLDINGS

SERIAL TITLE	INDEXED OR ABSTRACTED BY THESE SERVICES	California Inter-Segmental Holdings													Other Region XI Libraries	AVERAGE NUMBER OF CIRCULATIONS PER YEAR
					University of California Holdings						Region XI Holdings NLM Biomedical Network		SU			
		CSUC	UCSB	UCR	UCSC	UCB	UCSF	UCD	UCLA	UCSD	UCI	Lane	USC		
KOREAN																
Journal Of The Korean Medical Association. 1,1958- (free)	CA-0 EM						4- 1961-			6- 1963						SF-0
LATIN																
Science Reports Of The Tohoku University. Series 4. Biology. Rika Hokoku, Seibutsugaku. 1,1924- (Exchange)	BA-6 EM CA-0					1- 1924-										
LETTISH																
Latvijas PSR Zinatnu Akademijas Vestis. 1947- ($13.50)	BA-129 CA-61(754)			1963-												
NORWEGIAN																
Norske Tannlaegeforenings Tidende. 1,1891- ($21.40)	IM EM						24-64 1915- 54		30-							LA-0.1 SF-0
Tidsskrift For Den Norske Laegeforening. 10,1890- ($38.40)	IM BA-0 CA-0 EM									15- 1960-						
POLISH																
Acta Biologica Et Medica. 1,1957-	IM BA-1					8- 1964-	1- 1957-	1- 1957-	9- 1965-	1- 1957-		1- 1957-				B-0.1 LA-0.2 SF-0
Acta Microbiologica Polonica. Series A. Microbiologia Generalis. 1,1969- ($7.00)	IM SCI BA-24 CA-0 EM				1- 1969-	1- 1969-		2- 1970-	1- 1969-	1- 1969-						B-0.7
Acta Microbiologica Polonica. Series B. Microbiologia Applicata. 1,1969- ($7.00)	IM SCI BA-21 CA-21(1905) EM					1- 1969-		1- 1969-	1- 1969-	1- 1969-						B-0
Acta Neurobiologiae Experimentalis. 30,1970- ($22.00)	IM BA-52 CA-0 EM	SJ 26, 1966-				1- 1928-		30- 1970-	30- 1970-	30- 1970-		30- 1970-				B-1.6 SU-0.5
Acta Parasitologica Polonica. 1,1953-	BA-42 CA-9 EM	Long Beach 14, 1967-	39-			1- 1953-		1- 1953-	2- 1954-							B-2.6
Acta Physiologica Polonica. 1,1950- ($36.00)	IM SCI-0.636 BA-0 CA-21(1067) EM	Fresno 16, 1965-		16-		1- 1950-	13- 1962- Eng. ed.	18- 1967-	4-20, 1953- 1971 Eng. ed. 13- 1962-	14- 1963- Eng. 13- 1962-	13- 1962- Eng. ed.	(3)- 1952- Eng. ed.	13- 1962- Eng. ed.			B-1.1 SU-0.6
Acta Protozoologica. 1,1963- ($14.35)	BA-32 CA-21(1906) EM	San Diego, San Fran. 1,1963-	1-			1- 1963-		1- 1963- M.L.	1- 1963-	SIO 1- 1963-						B-2.9
Annales Universitatis Mariae Curie-Sklodowska. Sectio D. Medicina. 1,1946-	IM BA-24 CA-17(2204)					1- 1946-			1- 1946-			1- 1946-				B-0.2 LA-0.1 SU-0
Annales Universitatis Mariae Curie-Sklodowska. Sectio DD. Medicina Veterinaria. 1,1949-	BA-0 CA-11(2926)					4- 1949-			4- 1949-							B-0.2

Figure 1
Detailed Background Data for Selected Foreign Language Health Sciences Serial Titles

3. Planning Data for Conversion of UCUCS-2 Records into Machine Readable Form

The Institute of Library Research has already converted to machine readable form over one million catalog records representing about 750,000 unique Roman-language monographic titles cataloged by UC libraries during the period 1963-67. From this computer data base, the 47-volume UC Union Catalog Supplement (here referred to as UCUCS-1) was produced, and is now in use in each of the nine UC campuses, and in the California State Library, and on each of the 19 California State University and Colleges System campuses.

Some 1.7 million additional Roman-language card records, representing monographs cataloged by the UC libraries during the period 1968-72 have also been collected and pre-processed by ILR, and the cards are now warehoused in the Richmond storage facility awaiting further planning and processing. These records are referred to as UCUCS-2 records. There seems to be agreement within the UC Library System that these records should eventually be converted into machine readable from. All of the UC Santa Cruz records are already on computer tape and will be available when appropriate for further UCUCS-2 processing.

The question this study explores is how to get the unconverted UCUCS-2 records into machineable form as economically and easily as possible. Since no firm commitment has been made yet to any specific product or service (e.g., printed or microform author-title book catalog, or on-line searching), this proposed machine file should be flexible enough to generate a wide variety of products or services such as catalog cards, circulation records, a systemwide shelf list, and printed book catalogs or supplements.

Some of the card records are already available in machine form from external source files such as the LC MARC, OCLC, UCUCS-1 and UC Santa Cruz machine files, and could very likely be copied therefrom with less time and cost than required for original conversion. Some records are not available in machine form and would have to be converted.

Because of the special and difficult problems associated with the computer representation and processing of non-Roman alphabetic information, most of the records submitted for UCUCS-1 that contained non-Roman alphabet information were set aside for special processing and not included in UCUCS-1. These approximately 63,000 records have still not received any processing. It is assumed that the same practice will be followed for UCUCS-2, namely that the non-Roman material will be separated out and not converted with the other material. Thus only the Roman alphabet material is of interest to the conversion problem. It should be clear, however, that some consideration eventually needs to be given to the approximately 193,000 non-Roman records (63,784 for UCUCS-1, 130,099 for UCUCS-2) that have been submitted to date for the UC union catalog efforts. Because the non-Roman records have already been set aside for separate processing, this study only concerned itself with planning for the conversion of the Roman alphabet records.

With this background, a study was done at ILR to:

a. Determine the magnitide of the UCUCS-2 conversion problem,

b. Determine the extent to which those records were already available in some existing data bases,

c. Determine the nature of the library materials represented by the UCUCS-2 catalog records (i.e., the nature of the material acquired and cataloged by the UC campuses during the period 1967 through 1972.)

d. Determine the extent to which some unique record identification number such as the LC Card Number was available for each of the UCUCS-2 records.

The UCUCS-2 records supposedly represent all of the monographs cataloged (and perhaps acquired) by the UC General Libraries during the period 1968 through 1972. As such, our sample of UCUCS-2 material represents much of the type of material that was going into the UC collections during this recent five-year period. For that reason it is of interest to determine the general characteristics of this material.

An analysis of the language of publication of our sample monograph records show that approximately 34% of this material was in a foreign language. Berkeley had the highest percentage (44%) of foreign language monographs. Almost half of the material was published during the five-year period in which the UCUCS-2 material was collected, and about two-thirds of the UCUCS-2 material was published during the total UCUCS time period of 1963-72. About one quarter of the UCUCS-2 records were for material more than 20 years old.

Suggestions have been made of the possibility of preparing a computer-based numeric register or book catalog for the UC library resources in a manner similar to that done recently for the Louisiana libraries and described in the previous discussion of our bibliographic access study. Our data indicates that about 81% of the UCUCS-2 material has some sort of unique number associated with it, but a large fraction of the numbers are not on the local cards and would have to be found by a relatively time-consuming lookup process. About 63% of the total UCUCS-2 records have some type of unique material identification number on the local catalog record. Using the best available information regarding the total number of Roman alphabet UCUCS-2 records, our data suggest that if a numeric register were to be considered, it could represent about 1.06 million of these cards if the information was taken directly from the available cards, and a total of about 1.38 million of these records if additional lookups were made to search for missing numbers.

Because it is generally so much more expensive to create a new machine record than to copy it from some of the existing data bases of catalog records, one major file conversion policy would be to make as much use as possible of available machine data bases. Project and budget planning for

UCUCS-2 record conversion will need a good estimate of the number of records that might have to go through an original conversion process. Sample UCUCS-2 records for each campus (a total of 8,337 records) were examined to find the extend to which they overlapped with three machine data bases already available at UC: LC MARC, UCSC, and UCUCS-1. The data shows that about 27% of the UCUCS-2 material can presently be taken from the LC MARC data base. Over 15% of the source cards will be immediately identified as LC MARC records by inspection of the card, and another 11% of the source cards could only be identified as LC MARC records by a bibliographic author-title search.

A total of over 48% of the UCUCS-2 material can be taken from at least one of these three UC files. Some of the remainder can be taken from other externally available files such as OCLC or SDC/Information Dynamics LIBCON. With a minor adjustment to account for some out-of-scope cards to be removed from the UCUCS-2 records, we now see a total of at least 807,000 UCUCS-2 card records that can be copied from existing UC machine files.

The Ohio College Library Center (OCLC) presently has over one million catalog records available for on-line computer searching and copying. Approximately 500,000 of these records duplicate the LC MARC file that UC already maintains. All of the UCUCS-2 records that were not found in any of the three UC files were searched against OCLC. A total of 30% of the residue records (i.e., those records not found in any of the three UC data bases) were found in the OCLC data base. Extrapolating this to the total UCUCS-2 card file, we find that after first searching against the three available UC files, an additional 217,000 records can be found in the OCLC file. A total of about 520,000 UCUCS-2 records would still have to be copied from other files, or keyboarded, even if the three UC files and OCLC were used.

The results of this study effort are discussed in more detail in an ILR report in preparation.

4. Title Search Codes for Large Catalog Files

Most of the information retrieval systems such as DIALOG, ORBIT, BASIS, and MEDLINE that work with machine data bases from the abstracting and indexing services provide a capability to search on author names or title words in addition to subject term searching. Title word searching capability is very helpful for the file user, but is relatively expensive to provide and maintain. With the exception of BALLOTS and a few other library automation systems, few of the computer-based systems working with conventional library records provide any title searching capability.

The lack of a title searching capability in a particular system is usually an issue of economics or local machine limitations. For title word searching, a very large index of title words (1/2 million or more words for some files) must be built and maintained as a machine file, usually in some form of direct access device such as disc storage. As the number of titles in the on-line machine readable cataloging data bases increases, so does the volume of direct access space needed to store the bibliographic records and associated indices. This is a very expensive proposition, especially if files are to be made available for on-line searching. The high cost of building and maintaining such machine indexes has led to the compromise approach of building indexes that correspond to search codes that are derived from the title words, or combined author and title words. Such search codes give some title searching capability, but with a considerable savings in file space and costs.

Because a search code is a form of text compaction, the truncated search key is naturally less specific than the whole text it represents. The problem for the index designers is how to produce a truncated search key which is specific as possible while being easy to manipulate by people who have to use it.

Title word searching and search codes are of interest both for batch and on-line searching. The batch searching of catalog data bases is often done for on-demand catalog and production systems in which catalog card sets or cataloger's worksheets are printed from the file in response to a search for the catalog information for a given title. A similar process is is sometimes followed for the search and copy operations that are part of an effort to convert an existing catalog card file into machine language form; this is usually done by searching a data base for a match with a given title, and copying out a machine record for that title. On-line searching of titles in catalog files is most often seem with on-line catalogs such as the installations of IBM-Los Gatos or Ohio State University, or the on-line cataloging support systems such as OCLC or BALLOTS.

Much work has already been done on the design and evaluation of author and title indices based on truncated search keys which are sufficiently distinct to be useful in on-line, interactive cataloging support systems. Although one theoretical work has suggested that the degree of distinctness of any search key index will deteriorate as the collection increases in size, very little experimental data has been reported regarding the performance of such search keys for large files.

This project specifically measured, over a large range of file sizes, the behaviour of one such truncated search key, the 3,1,1,1 truncated title search code developed by the Ohio College Library Center (OCLC). This code was chosen by OCLC as one that could be used efficiently by a large number of people in an on-line cataloging environment.

Based on the results of our evaluation of the OCLC search key, we have proposed and tested a new search code, and found it to be significantly better in terms of its precision of retrieval.

A publication is being prepared to describe the findings of this study project.

5. UCUCS-1 Error Analysis

The University of California Union Catalog Supplement was intended to serve not only as a finding tool but also as a complete bibliographic record of the items cataloged during the five-year period 1963-1967. It is divided into a 31-volume Author/Title catalog and 16-volume Subject catalog. As noted earlier, over 1.1. million catalog records were collected and processed for this catalog, constituting approximately 750,000 unique titles.

Keyboarding accuracy was recognized as being very important in the production of this catalog, because an automatic format recognition program was to be used that depended upon the accuracy of the insertion of field delimiters by the typists. There was no key verification stage in the processing of UCUCS records, although the keying vendor's contract stipulated a keying error rate not to exceed 0.5% of the keystrokes, which meant that ILR would tolerate an average of two errors in 400 units or five records.

The effort to control the quality of the keyboarding was one of several planned methods of quality control which were either only partially successful or else not implemented because of various factors. It was not intended by the Project Manager that the data base be exhaustively manually proofread or edited; to do so would have been impossible given the then-prescribed time and monetary constraints of the UCUCS project. Moreover, a major purpose of the project, according to the Project Director, was to experiment with the idea of producing a book catalog with a minimum of manual intervention and with an error level that was supposedly agreed to in advance as one of the product specifications. As much as possible of the catalog production was to be performed by computer processes with only limited human inspection, including quality control.

Two mechanical quality control efforts planned for this project were the use of the machine readable equivalents of the Harvard shelflist for a name authority list of about 260,000 entries against which all UCUCS author names would be checked, and the Oxford English Dictionary for a English title word list of about 75,000 words against which all UCUCS title words would be checked. Because of production time constraints, these programs were never used.

A third mechanical quality control effort was used in production to a limited extent. This involved comparing the subject headings which would appear in the Subject catalog with a machine-readable authority list which in this case consisted of the machine file equivalents of LC Subject Headings List, 7th edition and the first annual supplement, plus approximately 50,000 subject headings verified as legitimate U.C. headings not included in the U.C. list, plus about 3,000 of the geographic headings used at the U.C. Berkeley Library main catalog. These together amounted to a subject heading authority list of about 120,000 entries. All of the subject headings in the total UCUCS file were run through the machine process. Approximately 40% of the needed changes, amounting to 1,058,072 changes, were ultimately made in the UCUCS Master File--again, limited because of time and monetary constraints.

All other operations performed to produce UCUCS were also done by computer rather than manually. Most of the source records went all the way from keyboarding to page printing and binding without manual editorial intervention at any point in the production cycle. This was a management decision that resulted in a high error rate (mostly because it was not possible within time and budgetary constraints to implement several of the planned programs and procedures) but a lower unit cost than had been experimented by any other equivalent book catalog conversion effort before or since UCUCS.

With this background, there were five major reasons for doing this study:

a. UCUCS has been the object of much criticism because of the many errors that have been found in it. This criticism pointed up the need for an objective measurement of the errors in the catalog. A goal of the study was to provide a definitive statement of the nature and extent of the errors in UCUCS.

b. Improve the machine-readable file from which the book form UCUCS was made. The file needs to be cleaned up for use by the U.C. BibCenter for on-demand catalog card production and other applications that will use the UCUCS machine records. Moreover, the UCUCS file can serve as a valuable resource data base for subsequent use by libraries outside the University of California system. The fewer the errors in the file, the greater its value.

c. The programs used to produce UCUCS also need improvement for use in subsequent bibliographic processing efforts. A careful, definitive study of the errors in UCUCS could facilitate such program improvement.

d. Identify needed changes in local U.C. library procedures. Some of the error in the catalog is due to failures in preparation of the records prior to handling by the ILR staff. Some of the error is also due to variant cataloging practice among the nine U.C. campuses. This study was intended to help delineate areas where consideration could be given to improvement in local procedures.

e. There is a need for a general methodology for measuring errors in bibliographic catalogs--machine produced or otherwise--and in machine-readable bibliographic files. As far as we have been able to determine, no such generalized methodology has yet been designed. The present study analyzes both rates and types of errors in a particular catalog; in the process of doing this, a taxonomy of error types has been developed which should be applicable and useful in the error analysis of any bibliographic catalog or similar textual file.

A stratified random sample of 94 pages from UCUCS was used in this study --61 pages from the Author/Title section of the catalog and 33 from the Subject section. Each of these pages was copied and read by one of the two authors who marked the copied page with red pencil and recorded each error found on an error coding sheet. Each page was re-examined by the other author in order to catch any errors missed by the first person and also to insure continuous

standardization of interpretation of the error codes.

The analysts used an inclusive definition of error. An error was considered to be not only problems which caused loss of entry point or misfiling of entries, but also anything which might cause confusion or irritation on the part of the catalog user. Therefore, relatively minor mistakes such as improper spacing or print size were included as errors in this study. The "catalog user" was considered to include not only professional librarians but also students and the general public.

Although all sorts of errors were included in the study, they were coded in such a way that they could be grouped later into three general categories of "fatal", "serious", and "minor;" thus relatively insignificant errors could be evaluated separately from more serious ones. Fatal errors were defined to include those which would make it very likely that an entry point (i.e., a bibliographic record) would be lost to the user. Serious errors included non-fatal errors which would make it fairly likely that an entry point might be missed by the user and errors which render the content of the record unclear or misleading. Minor errors included those which merely affect the appearance of the entry without being likely to cause confusion for the user.

Each error found was coded according to six different aspects: Type, Location, Effect, Cause, Language, and Non-Monographic Type. Using each of these aspects in recording the errors made it possible to get a rather realistic and specific idea of the nature of the errors in UCUCS, and this, in turn, will make it possible for programmers and systems analysts to estimate what sorts of improvements might best be made in the data base and the programs which produced the catalog.

After all of the errors had been coded, the collected data was keypunched; most of the data reduction was done by computer.

A total of 4,338 errors were found on the 94 sample pages of 5,900 entries (3,589 entries in the Author/Title section and 2,311 in the Subject section). This represents an average of 46.1 errors per page, or 0.74 errors per entry. There were 3,167 errors in the Author/Title section and 1,171 errors in the Subject section. We can estimate that there are an average of 0.88 errors per entry in the Author/Title section and 0.51 errors per entry in the Subject section. Errors tend to "clump" in some entries rather than being evenly spread throughout the entries; thus, many entries showed no errors. We can also estimate that there are approximately 51.9 errors per page in the Author/Title catalog and 35.4 errors per page in the Subject section.

Serious and fatal errors together represent only about half of all the errors. The serious errors totaled 1,886 representing 43.5% of all found, and the fatal errors totaled 300, representing 6.9%. There were 2,152 minor errors in the sample, or about 40% of all the errors found.

The final report is presently being prepared as an ILR technical report.

6. Initial Article Filing Problems for Book Catalogs

Computer-based filing rules for library catalogs are a relatively complex subject, and have received considerable attention already by library researchers. This study concerned itself with only a segment of that problem, namely the filing treatment of initial articles.

Library filing rules are usually explicit regarding the way in which initial articles (e.g., A, An, The) are to be considered for filing purposes. In general, the procedure is to ignore the initial articles in filing. The ALA publication states, for example, "The following table lists definite and indefinite articles in various languages in the nominative case only (all genders and both numbers) which should be disregarded according to the rule for articles (Rule 4)." The LC filing rules provide a table of "...definite and indefinite articles in various languages in the nominative case only (all genders and both numbers), which should be disregarded whenever they occur as the initial word of a title." For computer-based book catalog programs, some of the designers have tried to follow these rules with their computer programs, often using simple table lookup programs to see if the initial character string of a title is included in a master table of initial articles. However, there have been difficulties in exactly following the standard manual practices, particularly when the machine records do not include language codes. The blind obedience of the computer programs in following the tables and the stated rules leads to the misfiling of titles such as A is for Apple, As You Like It, De Facto School Segregation, Die Like a Dog, and To the Bitter End where a character string otherwise identified as an initial article in some language by a table lookup program should in fact be considered for filing purposes instead of being disregarded. This problem is particularly severe in a library that handles titles in many languages. This study developed estimates of the frequency of occurrence of initial articles in titles in many languages and an estimate of the extent to which they might be considered for filing purposes, and suggested a strategy to handle the initial article problem.

The list of 93 articles to be studied were taken from three sources, and there are disagreements between these sources regarding which articles are to be ignored, and what languages are involved for each article.

The differences in the lists of articles in these sources suggest that there are linguistic problems here for study as well as computer processing problems. For example, how do the librarians treat each of these foreign language articles in the countries where the articles are in that native tongue? Are there other articles to be added to these tables from other languages (e.g., Samoan, Tagalog, Catalonian)? The basic assumption regarding which articles were to be included in the tables were not challenged for this study, although that would seem to be an appropriate matter for review. Furthermore, each of the character strings studied was assumed to be an "article" and not some other part of speech even though that character string might not be considered to function as an article in the given language.

This study was an empirical one, and the data for this study were obtained from the printed UCUCS data base described earlier. This catalog data base was assembled from a total of over 1.04 million source catalog card records received from the nine UC campuses. Because some records were duplicates submitted by two or more campuses, the file was eventually consolidated into a union catalog resulting in a final total of approximately 750,000 unique monograph titles, of which about 50% are for non-English material.

Because input editors were used during the file conversion effort, and the keyboard operators were instructed to keyboard everything on the source cards (including all the initial articles), the source machine records contained all of the initial articles in all of the records.

These machine source records were subsequently used to prepare the book catalog. No language codes were systematically included in the UCUCS machine records. The book catalog program filed all of the other initial articles with all of the other words, and then printed the entries where they could be easily inspected.

For each of the articles that were studied for this report, the appropriate printed pages in the UCUCS book catalog were examined in close detail to determine the frequency of occurrence of the article, and whether or not it should be ignored for filing purposes. Data assembled for each of the articles were then summarized in the tables given in the published report of this project. Whenever possible, the entries were reviewed and annotated by someone with both a relevant language skill and formal library training; some pages were examined by as many as six different people because of the different language skills required.

Almost every one of the over 56,000 initial article entries in the author/title catalog were examined and identified by language and their filing situation. Only a very few entries (probably less than 200) were left unanalyzed because a necessary language skill was not readily available (e.g., Sotho, Gaelic, Indonesian).

The data analysis effort provided summary tables in which each article was listed in alphabetical order and annotated to show the languages in which that character string is used as an article. A frequency count was also given to show the number of times that a character string was used with an author or title entry in each of the title languages. For example, the character string "De" is used as an article in the Danish, Dutch, Dano-Norwegian (Riksmaal), and Swedish languages, but was also used in some capacity as an initial character string in English, Latin, French, Spanish, and other titles (e.g., De Facto School Segregation); frequency counts for this character string were given for each of those languages, and also totalled. Several articles were used in more than 5,000 titles and 24 articles were not used as initial articles in any of the 750,000 titles. Some character strings were used in many languages other than the ones in which they were used as articles. The character string "O", for example,

is used as an initial article in Hawaiian, Portuguese, and Romanian, and serves non-article functions in 16 other languages.

In considering the utility of a simple table lookup strategy for handling the initial articles, a summary was made up for each article, of the number of times that title entries with that article would be filed correctly or incorrectly according to a simple table lookup procedure. These data indicate that with a simple table lookup program for this data base, using the 93 articles studied, a total of 47,844 title entries would be filed correctly, and 3,192 title entries (6.3% of the title entries) would be misfiled.

These data also suggest that 1) a block of 22 articles, for 26.2% of the title entries could be handled by table lookup techniques with no misfilings; 2) another block of 13 articles for 0.9% of the title entries will be completely misfiled by the use of a simple table lookup approach; and 3) a third block of 33 articles will be handled by a simple table lookup program with varying degrees of filing error.

The results of this study are scheduled to appear in the September 1975 issue of the Journal of Library Automation.

7. Analysis of Multi-File Indexes for On-Line Reference Searching

Computer-based reference services such as the Lockheed DIALOG and SDC ORBIT systems, now being used with increasing frequency by the libraries of UC and other organizations, operate with bibliographic citation tapes furnished by data base vendors such as Engineering Index, Inc. and Chemical Abstracts Service. In our use of these files, we have noticed a number of vocabulary problems such as a relatively large number of misspelled words, and many variant forms for the same word. These vocabulary problems are compounded when the users work with research systems which have multiple data bases, and which build indexes to the words in article titles (including foreign language titles).

This study examined the nature and extent of some of these index vocabulary problems, particularly for the major data bases associated with the Lockheed DIALOG system. A report is presently being prepared to summarize the results of this study.

8. Document Delivery Support for SDI Systems

The UC Center for Information Services (CIS), a University-wide activity that is located on the UCLA campus, currently operates a major SDI service primarily for the benefit of UC faculty, staff, and students. As of April 1975 it was providing SDI service with over 3500 search requests (profile/data base combinations) running on over 1500 profiles. There were nearly 1300 unique users, served by almost 200 profile analysts at 43 locations. The system is running with the ERIC, CA Condensates, BIOSIS Previews, SSCI, and CAIN data bases.

Since its initial establishment as an ILR project in 1967, CIS has had a special interest for ILR. We have continued to work with CIS, even after it became fully operational, to help improve its performance and quality of service. One recent topic of interest for us has been the issue of how to more closely couple CIS's SDI system with the University libraries and their document delivery systems.

The developers and operators of almost all computer-based SDI systems have generally kept a clear separation between the SDI systems and the document delivery systems. In most instances, the SDI systems were intended only to furnish the user with citations to relevant publications; it was generally felt that it was somebody else's responsibility to get the publications into the hands of the patron. There have been rather distinct boundaries and interfaces between these SDI and document delivery systems and this has been disadvantageous to patrons of the SDI services. The discontinuity between these systems need not be so pronounced, and this ILR project developed a way to more closely couple the two systems for the benefit of the SDI patron. No other examples were found during our effort of a coupling system in operation anywhere linking a large SDI service supporting multiple data bases and a large number of geographically-dispersed users, and a geographically-dispersed, multi-library document delivery system.

The UC campus library systems vary in their degree of centralization, but typically several branch libraries exist on each campus. As an extreme case, the Berkeley campus has over 20 affiliated branch libraries as part of the campus library system, plus an additional 20 or more unaffiliated libraries. In all, the total UC library system resources potentially available by policy to any UC person represent over 100 separate library collections and locations.

The general objective of the system modification developed by ILR was to more effectively couple the University's central SDI system with its significant but widely distributed library resources. We concentrated our attention on an SDI system, but all the arguments and methods could be applied equally well to retrospective search systems in cases where there are identifiable clusters of users in groups large enough to make location-file-building efforts worthwhile.

Our general approach was to try to annotate the CIS output citations with library location and call number information that was tailored to each user's location. The most obvious reasons for providing this information with each printed citation are:

a. Each individual patron (or a designated representative such as a research assistant) is saved a considerable amount of time and effort in determining where a copy of a cited publication can be obtained, and obtaining the call number of the publication so that it can be physically retrieved and examined.

b. Because of the very abbreviated form of entry of the citation, or lack of familiarity with the practices of the supporting libraries, some patrons may not be able to locate some publications (particularly foreign language titles) that are actually held in their libraries. Our approach minimizes such problems.

c. By calling several campus library locations to the attention of the patron, better use can be made of available local resources. The recipient's attention might even be called to previously unknown supporting libraries.

d. The system can provide some help to the user or to the campus inter-library loan operation in the event that a cited publication is not held by a library on the user's campus.

e. The system can lead to a better utilization and awareness of the total University-wide library resources.

f. Continuing studies of each library's collection adequacy, and the extent of support and performance of the document delivery systems will be greatly simplified by the inclusion of this location and call number information on the citation printouts and output tapes.

Our intent was to show an SDI recipient where each cited publication was held on that user's campus. If the publication was held in several libraries on that campus, then the library name and the call number associated with each library would be printed out with the citation. The idea here was to leave to the user the choice of which campus library to patronize, since there might be a personal preference because of library location, facilities, or other factors.

Each UC patron is associated with a campus code in the CIS/SDI system. Reference is made to this code at the time output hit citations are assembled and printed by the system. For a given campus code, tables are stored in the computer system which give the names of the major publications covered by each bibliographic data base, the name of the holding libraries, and the call number for a given publication in each of the holding libraries on each campus. This location and call number information, when available, is then

printed to accompany the relevant citaton. The files presently do not include all of the titles covered by each data base; consequently some output citations will not be annotated with location information.

An example of an annotated printout is shown in Figure 2. In some cases as many as 9 different library locations were given for a title on the same campus. With this new system, a UCLA patron, for example, might receive a printed citation to an article in a journal, along with the names of the four UCLA libraries that receive that publication and the call numbers used by each of them for that publication. In the event that we ascertained that a cited title was not available on the user's campus, we then found another UC library that had the title, and entered an appropriate notation into the machine file to be printed for that title-campus combination. When a title was found to be unavailable on a given campus, we searched other UC campus holdings in the search sequence that would normally be followed by that campus' inter-library loan staffs (e.g., look first at a close UC neighbor, or a UC campus with which there is daily courier service). Thus the computer-printed reference to any off campus UC location will likely point to the same place to which the campus inter-library loan office would have pointed, but we have done the lookup once and stored it for all future use, thus reducing the need for repeated efforts by the loan staffs. No inter-library loan work was done in advance here to store notations about availability at non-UC libraries, but that could be done later if desired.

For our system to work properly, our file had to include the journal title or CODEN expressions as they are used by each particular data base. This was not difficult for the CA Condensates and BIOSIS Previews tapes which used the CODEN as a data element, but it required separate machine records with title or abbreviated title entries for the other data bases.

For the ERIC CIJE data base, location/call number records were prepared for every one of the over 700 serial titles reported as being covered by that service. All the more than 1000 titles listed as being covered by SSCI were encoded and put into our machine files. Citation frequency data was used to select the most active titles from BIOSIS Previews, CAIN and CA Condensates instead of putting the entire serial list in our machine files.

At the completion of our file building effort, a total of 3,280 titles had been put into the machine file along with library location and call number information for each campus, amounting to about 30,000 separate title-location entry statements. Holdings of over 60 separate library branches are presently represented in our machine file.

The location information coupling system has been in regular production use since early 1975 and has been received with thanks by many library staff members and SDI recipients. Preliminary indications are that a significant amount of time is being saved for users by eliminating the need for them to make a visit to various library catalogs to determine the location and call number of cited titles of interest.

The major difficulties noted to date are an increase of about 15-20%

CA083C5C380330. BIOLOGICAL PROPERTIES OF PLASMIN DIGESTS OF CARBAMIDOMETHYLATED HUMAN GROWTH HORMONE. (ARTICLE)
REAGAN, CHARLES R.; MILLS, JOHN B.; KOSTYO, JACK L.; WILHELMI ALFRED E.
DEP. PHYSIOL., EMORY UNIV., ATLANTA, GA.
PROC. NATL. ACAD. SCI. U. S. A. (PNASA), 1975, 72(5), 1664-6 (ENG).
C2-HORMONE PHARMACOLOGY.
GROWTH HORMONE CARBAMIDOMETHYLATED DERIV; PLASMIN DIGEST GROW HORMONE.
LOC: CU-BIOC,BIOL,CHEM,MAIN,MATH,PHYS (G11.N26).
SELECTED BY 'SELECT IF' #1.

CA083C5C38094K. EFFECTS OF METHYLPREDNISOLONE ON OXYGENATION IN EXPERIMENTAL HYPOXEMIC RESPIRATORY FAILURE. (ARTICLE)
JONES, RICHARD L.; KING, E. GARNER.
MED. RES. INST., UNIV. ALBERTA, EDMONTON, ALBERTA.
J. TRAUMA (JOTRA), 1975, 15(4), 303-9 (ENG).
C2-HORMONE PHARMACOLOGY.
METHYLPREDNISOLONE HYPOXEMIA; RESPIRATORY FAILURE METHYLPREDNISOLONE.
LOC: AVAILABLE AT UCSF.
SELECTED BY 'SELECT IF' #1.

CA083C5C381877. 9-HYDROXYELLIPTICINE. BACTERIOSTATIC AND BACTERICIDAL ACTIVITY IN VITRO. (ARTICLE)
MICHEL, GEORGES; LEMOINE, ALAIN; NGUYEN DAT XUONG; OLLE, JACQUELINE.
LAB. MICROBIOL. IND. VIROL., U.E.R. SCI. PHARM., TOULOUSE, FR
C. R. HEBD. SEANCES ACAD. SCI., SER. D (CHDDA), 1975, 280(12) 1493-6 (FR).
C3-BIOCHEMICAL INTERACTIONS.
HYDROXYELLIPTICINE BACTERICIDE ACTIVITY.
LOC: CU-BIOL,EART (G46.P225).
SELECTED BY 'SELECT IF' #1.

CA083C5C38247N. INDUCTION OF MATURATION (MEIOSIS) IN XENOPUS LAEVIS OOCYTES BY THREE ORGANOMERCURIALS. (ARTICLE)
BRACHET, J.; BALTUS, E.; DE SCHUTTER-PAYS, A.; HANOCQ-QUERTIE J.; HUBERT, E.; STEINERT, G.
DEP. MOL. BIOL., FREE UNIV. BRUSSELS, RHODE-ST.-GENESE, BELG.
PROC. NATL. ACAD. SCI. U. S. A. (PNASA), 1975, 72(4), 1574-8 (ENG).
C3-BIOCHEMICAL INTERACTIONS.
MERCURY COMPD OOCYTE MATURATION; PROGESTERONE ORGANOMERCURIAL OOCYTE; MEIOSIS OOCYTE ORGANOMERCURIAL.
LOC: CU-BIOC,BIOL,CHEM,MAIN,MATH,PHYS (G11.N26).
SELECTED BY 'SELECT IF' #1.

CA083C5C38302B. ENZYMIC ACTIVITY OF RAT'S SMALL INTESTINE MUCOUS MEMBRANE UNDER REPEATED EFFECT OF HIGH TEMPERATURE. (ARTICL
RAKHIMOV, K.; DEMIDOVA, A. I.
LAB. PHYSIOL., TASHKENT, USSR.
FIZIOL. ZH. SSSR IM. I. M. SECHENOVA (FZLZA), 1975, 61(5), 7 84 (RUSS).
C3-BIOCHEMICAL INTERACTIONS.
INTESTINE ENZYME HEAT.
LOC: CU-BIOL (QP1.F5).
SELECTED BY 'SELECT IF' #1.

CA083C5C38545H. LUNG CANCER INDUCED IN HAMSTERS BY LOW DOSE OF ALPHA-RADIATION FROM POLONIUM-210. (ARTICLE)
LITTLE, JOHN B.; KENNEDY, ANN R.; MCGANDY, ROBERT B.
SCH. PUBLIC HEALTH, HARVARD UNIV., BOSTON, MASS.
SCIENCE (SCIEA), 1975, 188(4189), 737-8 (ENG).
D4-TOXICOLOGY.
LUNG NEOPLASM POLONIUM 210; CANCER LUNG CIGARET POLONIUM; RADIATION ALPHA POLONIUM LUNG.
LOC: CU-BIOL,PHYS,PUBL,AGRI,CHEM,BIOC,EART,FORE,CPTC (G1.S33).
SELECTED BY 'SELECT IF' #1.

Figure 2
Sample SDI Printout Showing Location/Call Number Annotations

in computer time required for the output printing program, and a need for some file maintenance effort to keep up to date with serial cancellations made at various UC libraries. ILR has been designated as the central reporting point to receive and act on error reports about library holdings from the CIS users and library staffs. Present plans are to keep this coupling system in operation for UC users.

Things that we would like to do to improve the system are:

a. expand the files to add more titles;

b. expand the system to handle major collections of non-UC users, such as large groups of subscribers at non-UC campuses;

c. develop a data analysis program to analyze the CIS output print tapes for collection development purposes to see what titles have been selected for printout and are potentially of interest to UC users but are not held on the user's campus or any of the other UC campuses;

d. replace these special location files with the active serials part of the master machine data base for the entire UC Union List of Serials.

A more detailed report of this coupling system has been submitted for journal publication.

B. AID TO INSTRUCTIONAL PROGRAMS

ILR takes very seriously its responsibility for support and contributions to the academic program, and has been active in that regard. Our support has been in the form of assistance to instruction and assistance to students on an individual basis.

1. Support to Classes

a. Classroom Instruction

The Director taught several courses in the School of Librarianship. Ms. Jo Robinson also gave several guest lectures for courses on the Berkeley campus.

b. Provision of Special Computer-Related Support

ILR provides special computer services to the students of several classes. Examples of the support provided are:

--SDI. Each of the students of the L276 class prepared interest profiles for a computer-based current-awareness, or selective dissemination of information (SDI) system operating at UCLA on a university-wide basis. These search statements were run against such data bases as Chemical Abstracts Condensates and the Current Index to Journals in Education, and the resulting computer-printed citations were judged for relevance to the profile statement. This exercise provided the students with an appreciation for the ways that computers can be used for library reference work. The profile entry work and checking was handled by ILR staff members.

--On-Line Demonstrations. An on-line terminal system at ILR, connected to a nationwide network with multiple-data base file searching capability, was demonstrated to students in each of three different classes during this reporting period. Many of the students were given the opportunity to use the terminals themselves to run trial searches of various data bases. ILR was using the equipment and the searching service on a current extramural project, and was able to provide some very useful instructional support as an adjunct to the ILR research work. ILR staff members acted as teaching assistants to demonstrate the equipment and to monitor its use by the students.

--Support for Student Programming. ILR also assisted in providing computer support for L275 (Data Processing for Libraries). The ILR support has included, for example, the handling of administrative and procedural arrangements associated with submitting jobs to the University Hall computer center, as well as providing daily courier runs to and from the computer facilities to test and run the student's programs. ILR keypunch equipment was also made available for use by students for their class work.

2. Support to Faculty

a. Proposal Support

ILR provides assistance to Library School faculty members in their formulation and preparation of proposals for extramural support. This support includes such areas as editorial assistance for proposal writing, determining the proper format and required numbers of copies for particular funding agencies, preparation of accompanying budget estimates, typing and reproduction work, and clearance with various University offices. Assistance is also given in the determination of the appropriate funding source for a particular proposal and the transmission of the proposal to the funding agency. ILR is often involved also in initial discussions with the funding agency to help clarify or determine more acceptable work statements, schedules, and levels of support for the proposed work.

b. Computer-Based Reference Services

ILR's present participation in the Center for Information Services project at UCLA calls for ILR to develop and expand computer-based SDI services to the northern UC campuses. As part of that activity, ILR has worked with the faculty and doctoral students at the Library School to offer computer-based SDI services or retrospective searches, tailored to each individual, to assist in their personal research work. Each Library School faculty member has been contacted and invited to participate in these services. A similar invitation has been extended to most of the Library School doctoral students.

3. Support to Indivudual Students

a. Professionally Relevant Part-Time and Summer Employment for Students

ILR has provided part-time and summer employment as Laboratory and Research Assistants for a large number of students, both from the School of Librarianship and from other departments. During this reporting period 27 students (including 23 graduate students from the School of Librarianship) have been employed at Berkeley by ILR. A complete list of these students is given later in this report. Not only did this employment provide direct financial assistance to these students, but for most of them it also provided work experience directly related to their professional interests.

b. Source of Study Problems for Students

ILR is accessible to all students (whether employed by the Institute or not) as a source of real case study problems for class projects, individual study efforts, or doctoral dissertations. ILR staff members are available and are encouraged to work with these students in order to provide the necessary problem statements, information, materials, and other supporting resources.

c. Doctoral Student Counseling

The Director of ILR served in the UCB School of Librarianship as the Chairman of the doctoral committee for 5 students, and as a member of the doctoral committee for two more students.

d. Literature Search Support

As mentioned earlier, ILR has worked with CIS to help introduce computer-based current awareness and retrospective literature searching services to faculty and staff of the northern UC campuses. As part of that activity, this service has been called to the attention of all of the doctoral students in the UCB School of Librarianship. Several profiles have been prepared and put into operation at UCLA for these students. Furthermore, many additional retrospective searches were run for individual students, using the ILR on-line searching services and facilities.

C. TEACHING AND EXTENSION PROGRAMS

The Director of ILR has a joint appointment with the Berkeley School of Librarianship. In that capacity, he taught a regular schedule of courses in that school. Ms. Jo Robinson of ILR also provided support to the School of Librarianship by giving guest lectures in several different courses, primarily on topics of information retrieval.

The Director planned and coordinated a Summer Workshop on the Mechanization of Library Technical Processes that was held at UC Santa Cruz during the Summer of 1974. A similar workshop was arranged by the Director and held at UC Santa Cruz during the Summer of 1975. The 1975 Workshop concentrated on computer-based reference services and utilized Ms. Robinson of ILR as one of the principal lecturers. The Director has organized one or more UC Santa Cruz Summer Workshops every year since 1971, recognizing that this is one way in which ILR can help with continuing education programs for the professions.

Other guest lecture assignments by ILR personnel during this period included a presentation by the Director to the American Society for Information Science, Special Interest Group on Law and Electronics, Pre-conference Workshop, June 26, 1975 on the topic of "Computer-based Reference Services Tutorial".

D. ILR-SPONSORED SEMINARS AND OTHER PROGRAMS

Computer-based reference services represent one of the current areas of interest for ILR. In that regard, ILR has been responsible, in conjunction with the University-wide Library Automation Program (ULAP), for arranging many seminars and workshops relating to specific information services and data bases. These programs were aimed at the continuing education of professional staff members of the UC library systems, as well as other library staffs throughout the state. UC faculty and students also attended these programs. The programs, described below, were planned and conducted by Ms. Jo Robinson of ILR.

Date	Target Audience	Programs
1974		
Aug 1	CSUC-San Francisco, Sonoma, Humboldt	IPS Query language and SDI profile writing
Nov 20-21	CSUC-San Jose, Hayward, Stanislaus, Chico, UC-Santa Cruz	IPS Query language and SDI profile writing
Dec 4-5	UC-Santa Cruz	IPS Query language and SDI profile writing
Dec 10-11	CSUC-Sacramento, Fresno	IPS Query language and SDI profile writing
1975		
Jan 22-23	CSUC-Chico	IPS Query language and SDI profile writing

Ms. Robinson also participated in several other workshops which were co-sponsored with other organizations or included other speakers:

1974		
July 15-16	UC Librarians	CIS data base workshops
monthly	CIS User Group	monthly meeting to provide a forum for review and update of CIS services to northern California CIS users and service agents
Nov 14	CIS User Group	IPS experience with BIOSIS and CA files

Date	Target Audience	Programs
Dec 13	CIS User Group	Discussion of CIS role in use of on-line search services
1975		
Jan 30	UC Working Group on UC Interface with On-line Retrospective Search Service Vendors	Development of agreements and procedures for working relationships between UC and the on-line search service vendors
March 14	UC Working Group on UC Interface with On-line Retrospective Search Service Vendors	Development of agreements and procedures for working relationships between UC and the on-line search service vendors
March 18	CSUC-CIS Coordinators	Discussion of CSUC use of CIS
May 16	professional librarians	California Library Association State University and College Librarian's Chapter Workshop Panel member on a session for "Promoting Library Use, or Where Does Reference Service End?"

E. OTHER SERVICE TO THE UNIVERSITY COMMUNITY

ILR staff members served as a backup resource for computer-based reference services to the UC campuses. ILR helped many users who were unable, for a number of reasons, to find a UC library that could prepare a query or search profile statement for computer searching services at the University-wide Center for Information Services. This backup profile writing service was provided as a stop gap measure for many users while the library staffs were being trained to handle this work. By using its on-line terminal facilities, ILR also served as an input node for the northern UC campuses to send their new search profiles and profile changes to CIS at UCLA for a much more rapid update.

The on-line terminal facilities of ILR were also used by some of the UC Berkeley libraries for on-line file searching of the Lockheed, SDC, SUNY, and MEDLINE services as part of test or backup operations.

ILR served in a consulting capacity to staff members of several UC organizations, including the Center for the Study of Law and Society, the School of Engineering, and the Center for History of Science and Technology. In a more general way, the Director makes a direct contribution to the University community by participating in the work of several University-wide committees such as the University Library Council, and the Library Council's Task Force on Library Management Information Systems. Ms. Robinson of ILR participates in the CIS User Group, which is a northern California university group that concerns itself with improving the services provided by CIS.

F. PUBLIC SERVICE

The research topics chosen by ILR have always been chosen with a view toward the relevance or transferability of the methodology or findings to other organizations. In that regard, much of our research activity represents a public service.

Our publication program is designed as a public service to provide current and widespread dissemination of our research reports. All of our technical reports are sent to the ERIC Clearinghouse for Information Resources to be noted in the ERIC abstract journals, indexed in the ERIC machine data base, and microfilmed to permit easy on-demand copy fulfillment services. All of the ILR reports annotated with an ED number in the bibliographies of this and other ILR reports, are available in hard copy or microform from the ERIC Document Reproduction Service.

The Director assisted the State of Hawaii in its planning for library automation and networking for the State Library and all of the public and school libraries. He also served as a member of the Technical Program Committee for the 1975 U.S. - Japan Computer Conference. He also participated in an Advisory Committee to an NSF project to provide computer-based information services to public libraries, and served as a consultant to the U.S. Office of Education.

For public service in a larger context, the Director has spent the last two summers working on UNESCO assignments in developing countries, helping to improve library and information services to scientists and engineers in those countries. The first summer was spent in Indonesia, and last summer's effort was spent in Tanzania. With both countries, ILR experimented with the provision of U.S.-based computerized current awareness services as a mechanism to augment resource-poor research facilities in developing countries. Cooperative arrangments were made by ILR with the Serengeti Research Institute in Tanzania and BIOTROP in Indonesia. The Director has a similar assignment in Egypt for the Fall of 1975.

III. PARTICIPANTS

A. FACULTY

Faculty members who participated directly in ILR activities during this reporting period are:

NAME	TITLE	AFFILIATED DEPARTMENT	FTE
Charles P. Bourne	Professor-in-Residence	School of Librarianship	0.5
William S. Cooper	Associate Professor	School of Librarianship	0.5
M. E. Maron	Professor	School of Librarianship	0.5

Other faculty members were involved in planning for proposals and new projects.

B. VISITING SCHOLARS

Professor Pauline Atherton of the Syracuse University School of Information Studies worked for a week at ILR on a project of mutual interest. Other guests also visited ILR, but for shorter stays.

C. OTHER PROFESSIONAL ACADEMIC STAFF

Ms. Jo Robinson, title: Assistant Specialist, is the only other ILR professional staff member.

D. GRADUATE STUDENTS

The following 23 graduate students, all from the School of Librarianship, were employed by ILR during this reporting period as lab assistants, research assistants, or programmers:

NAME	DEGREE OBJECTIVE	NAME	DEGREE OBJECTIVE
BASSING, MARY .	MLS	MATZEN, CONSTANCE	MLS
BLAIR, DAVID	PH.D.	RENWORTH, KENNETH	MLS
BUSS, MARGARET	MLS	SHEK, KITTY	MLS
CHRISTENSEN, NANCY		SOMMER, DEBORAH	MLS
FOUGNER, RAGNILD	MLS	SULLIVAN, MICHAEL	MLS
HANAWALT, VICTORIA	MLS	TODD, JUDITH	PH.D.
HECKART, RONALD	MLS	TREPPA, ROBERT	
HIMMEL, NED	MLS	WEEKS, KENNETH	DLS
HUIZINGA, PAUL	MLS	WELGE, JUDITH	MLS

NAME	DEGREE OBJECTIVE	NAME	DEGREE OBJECTIVE
IRBY, JANE	MLS	YATES, CAROL	MLS
KHOURY, PATIALA	MLS	YOU, CLAIR	CERTIFICATE
MARTELL, CHARLES	DLS		

E. UNDERGRADUATES

The following undergraduates were employed by ILR during this reporting period:

NAME	DEPARTMENT
HORVAY, GABRIELA	
PURDUE, CLAYTON	LANDSCAPE ARCHITECTURE
RENWORTH, KENNETH	COMPUTER SCIENCE
TALAMANTEZ, JOSE	SOCIOLOGY

F. ADMINISTRATIVE/CLERICAL/TECHNICAL STAFFS

Charles P. Bourne, Director (.50FTE)

Jo Robinson, Assistant Specialist (1.0FTE)

Rhozalyn R. Perkins, Principal Clerk (.50FTE)
Bonnie F. Shaw, Administrative Assistant II (1.0FTE)

Gabriela Horvay, Senior Typist Clerk
Jose Talamantez, Senior Typist Clerk

IV. SOURCES OF SUPPORT FUNDS

1. SOURCE	AMOUNT
University Opportunity Funds	4,665.30
State of California	36,505.00
Lockheed	1,903.67
Stanford	326.78
General Funds (19900)	120,566.89
Total	163,967.64

V. EXPENDITURES

2. EXPENDITURES BY SOURCE OF SUPPORT	AMOUNT
Administrative Support	119,969.20
Direct Research	41,190.85
Matching Funds	-0-
Other	-0-
Total	161,160.05

VI. SPACE CURRENTLY OCCUPIED

Since 1972, the Institute of Library Reseach has been housed in South Hall Annex, which has 2,500 square feet of space (rounded figure). During these past three years, the Institute has been sharing these facilities with another organization, the University-wide Library Automation Program (ULAP). ULAP was integrated into ILR's program from 1964 to July 1973. On the latter date ULAP became an official and separate organization. The ILR on-campus facilities, especially because they are near the School of Librarianship, have facilitated the employment of students to assist with research. However the quarters have been quite cramped with two organizations sharing the same office space.

The Annex is a one-story building divided almost equally into two large rooms. The outer "main" room, or the one with the access door to the outside, is an open area for the clerical staff of ILR and ULAP and some of the ULAP production crew. Three terminals used for on-line access to BALLOTS at Stanford and the San Francisco Medical Center are located towards the back of the room. Previous tenants had partitions built in the inner room that provide eleven separate cubicle-like offices which are presently being used by ULAP project managers, programmers, and the Director of ULAP. The remainder of the ULAP production staff occupies the leftover area outside of these cubicles.

The School of Librarianship has provided an office inside South Hall (on the ground floor and adjacent to the annex) to the Director of ILR because the Director is also on the faculty of the School. Of the remaining two rooms in that area of South Hall, one is used as office space for another ILR staff member and the other is used as a conference/class/work-room shared by ILR, ULAP and the School.

Because the hallway between the Annex and South Hall is quite wide, these areas are also being utilized as work areas. However, none of these activities obstruct passageways. One area is occupied by keypunch machines, another by a pick-up and delivery area for programs and computer output to and from the University Hall Computer Center, and a third area is used as an auxiliary work area. The keypunch facilities, the courier service, and the auxiliary work area are all shared by ILR, ULAP, and the School of Librarianship.

VII. THESES FILED IN PAST YEAR

No theses were filed this year as a result of research work done by students in ILR. This is largely because the Berkeley School of Librarianship does not require a thesis to be submitted as part of the requirements for the Masters degree. Several sixth year Certificate students and doctoral students, however, did participate in publication activity as part of their work with ILR. Students participated in work on the following publications during this reporting period as a part of their involvement and affiliation with ILR:

--Donald T. Thompson and Kenneth R. Weeks (with Prof. W. S. Cooper) The Duplication of Monograph Holdings in the University of California Library System. Oct. 1974. ILR-74-004. ED-097 883. Also accepted for publication in Library Quarterly.

--Judy Todd (with C. Bourne and Jo Robinson). Analysis of ERIC On-Line File Searching Procedures and Guidelines for Searching Nov. 1974. ILR-74-005. ED-101 757. To be submitted for journal publication as several separate articles.

--Charles R. Martell, Jr. Interlibrary Loan Turnaround Time: A Study of Performance Characteristics of the University of California, Berkeley Interlibrary Loan Lending Operation. Jan. 1975. ILR-75-001. ED-104 413.

--Dorothy Gregor (with C. Bourne) Methodology and Background Information to Assist the Planning of Serials Cancellations and Cooperative Serials Collection in the Health Sciences. Jan. 1975 ILR-75-002. ED-104 409. Accepted for publication in the Bulletin of the Medical Library Association.

--Dale Reed and Margaret Buss (with C. Bourne) Bibliographic Access to the University of California Library Resources at Berkeley and Los Angeles. June 1975. ILR-75-003. To be submitted for journal publication.

Other students have worked on publications during this reporting period, and are expected to contribute to the listing in the next annual report.

VIII. ADVANCED DEGREES AWARDED TO ILR-SPONSORED STUDENTS

The following people all worked at ILR while working on their post-graduate degrees, and have since received the degrees shown below.

M. L. S.	M. L. S.	(6th year degree) CERTIFICATE
Mary Bassing	Jane Irby	Claire You
Margaret Buss	Patiala Khoury	
Nancy Christiansen	Constance Matzen	
Ragnild Fougner	Kitty Shek	
Victoria Hanawalt	Deborah Sommer	
Ronald Heckart	Michael Sullivan	
Ned Himmel	Judith Welge	
Paul Huizinga	Carol Yates	

Several other students worked for ILR during this time while pursuing their Certificate and doctoral degrees; however their degree work is not expected to be finished until sometime during the next reporting period.

IX. PUBLICATIONS

The ILR technical reports produced during this and previous annual periods are listed on the back cover of this report. The ILR publications for this reporting period are also repeated below, along with other publications prepared for professional journals:

Bourne, Charles P. "Improvements in the Coupling of SDI System Output with Document Delivery Systems." Submitted for publication in a professional journal.

Bourne, Charles P., "Initial Article Filing in Computer-Based Book Catalogs: Techniques, Problems, and Article Frequencies." To be published in the Journal of Library Automation, September 1975.

Bourne, Charles P., Institute of Library Research Annual Report: July 1973 to June 1974 (1974) 25 pp. + appendices

Bourne, Charles P., and Dorothy Gregor, Methodology and Background Information to Assist the Planning of Serials Cancellations and Cooperative Serials Collection in the Health Sciences (January 1975) 60 pp. ED-104 409. To be published in the Bulletin of the Medical Library Association.

Bourne, Charles P., Dale Reed, and Margaret Buss. Bibliographic Access to the University of California Library Resources at Berkeley and Los Angeles. (June 1975). Also being prepared for publication in one of the professional journals.

Bourne, Charles P., Jo Robinson, and Judy Todd, Analysis of ERIC On-Line File Searching Procedures and Guidelines for Searching (November 1974) 140 pp. + appendices. ED-101 757. Being prepared as a series of articles for a professional journal.

Cooper, William S., Donald T. Thompson, and Kenneth R. Weeks, The Duplication of Monograph Holdings in the University of California Library System (October 1974) 32 pp. To be published in Library Quarterly.

Humphrey, Allan J., Survey of Selected Installations Actively Searching the ERIC Magnetic Tape Data Base in Batch Mode Volume I (June 1973) 86 pp.

Martell, Charles R., Jr., Interlibrary Loan Turnaround Time: A Study of Performance Characteristics of the University of California, Berkeley Interlibrary Loan Lending Operation (January 1975) 34 pp. ED-104 413.

All of the ILR reports had a distribution of about 250 copies. A complete list of major ILR technical reports prepared to date is given in an appendix to this report.

X. FIVE-YEAR PLAN

ILR does not yet have a current 5-year plan that would reflect or incorporate all of the recent changes and adjustments described in the Introduction to this report. So much change has confronted ILR recently that we are still in the process of formulating a new or modified set of objectives and priorities. We expect to make extensive use of our Advisory Committee this year to help formulate such a plan.

SUMMARY LIST OF ILR FORMAL REPORTS

(AS OF SEPTEMBER 1975)

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CARMICHAEL, R. L. and R. M. Shoffner, Annual Report, Institute of Library Research, University of California, July 1970-June 1971. Berkeley and Los Angeles: Institute of Library Research, University of California, June 30, 1971. 33 pp. ED-054 824.

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Preliminary Specification: Mechanized Information Services in Public Library Reference Centers; Part 1 of the Final Report...
Reilly, K. D., A State Library Network for Technical Information Service to California Business and Industry; Part 2 of the Final Report...
Brault, N. W., Statistics on the Libraries of the State of California; Part 3 of the Final Report...
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